SYLLABUS
Math 412, Foundations of Calculus
Fall 2013

Instructor: Jeffrey L. Meyer; 206F Carnegie, 443-1479, 443-1473, jlmeye01@syr.edu

Office Hours: TTh 11:30 am - 12:15 pm, W 9:30-11:00 am, and by appointment.

Text: *An Introduction to Analysis,* by W.R. Wade , Prentice Hall, 4th edition**.**

Class Time and Room: TTh 9:30 -10:50 am, Room 316 Carnegie**.**

Prerequisites: MAT 275, MAT 397, and a desire and ability to write and understand proofs.

Course Content: Chapters 1-4 (perhaps some of Chapter 5 as time allows): Real numbers, sequences, functions, differentiability, integrability.
An approximate order of events is:
          • **Chapter 1** Most of this was covered in MAT 275. What's new is the real numbers as a complete ordered field (Sections 1.2 and 1.3). You are responsible for learning or recalling the rest of the material in Chapter 1.
          • **Chapter 2** Sequences, Bolzano-Weierstrass theorem, Cauchy sequences in (Sections 2.1-2.4), and limsup and liminf (Section 2.5).
          • **Chapter 3** Limits of functions, Continuity, Uniform Continuity (Sections 3.1-3.4).
          • **Chapter 4** Derivatives, Mean Value Theorem, Taylor's Theorem, L'hoptial's rule, Inverse function theorem (Sections 4.1-4.5). Chapter 5 as time permits.

Learning Goals:
          ·understand the nature and role of deductive reasoning in mathematics
          ·use and understand the usage of mathematical notation
          ·follow proofs and other mathematical discourse
          ·write rigorous proofs of mathematical statements

Course Grade: There will be two one-hour exams during the semester (each worth 25% of the course grade) and a cumulative final exam (worth 30% of the course grade). Also, there will be several equally-weighted problem sets which will be collected and graded. One homework score will be dropped. Homework is worth 20% of the course grade. Class attendance is required.

Exams:

1.   Exam Dates (tentative):

Exam 1 - Thursday, October 3, 2013

Exam 2 – Tuesday, November 19, 2013

Final Exam – Tuesday, December 10, 2013, 12:45 – 2:45 PM (*not tentative!*)

2.   There will be no makeup exams. In case of a missed exam with a valid and verifiable reason, the relevant portion of the final will be used to determine the missing exam score.

Homework: There will be several problem sets assigned during the semester. You may work with others on the homework, but you must write up your own solutions and you are responsible for your solutions. Problem sets will not be accepted late.

Students with Disabilities: If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), http://disabilityservices.syr.edu, located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations. Making arrangements with ODS takes time. Do not wait until just before the first test.

Academic Integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see http://academic integrity.syr.edu.